

[54] **PORTABLE BAR CODE SCANNING DEVICE AND METHOD**

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[52] U.S. Cl. .... **235/472; 235/469**

[58] Field of Search ..... **235/472, 469**

[56] **References Cited**

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[57] **ABSTRACT**

A compact, portable bar code scanner employing as a

light source a light-emitting diode consumes extremely low input power. The scanner, which detects the reflectances from bars and spaces of the bar code symbol, uses optical beam-shaping methods to attain a large depth-of-focus for a non-laser system. A shaped illuminating light beam is caused to blink when the symbol is outside the depth-of-focus range and a signature imposed upon the light beam enables the scanner to substantially reject light interference. A scanning version employs an optical assembly mounted upon a bimorph leaf spring that is caused to vibrate at its natural mechanical resonance. The scanner operates with bar code symbols responsive to red light and is of sufficiently low weight to be easily hand-held.

**12 Claims, 5 Drawing Figures**

